

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated August 6, 2009 has been received and its contents carefully reviewed.

Claims 1, 16, and 24 are hereby amended. No new matter has been added. Accordingly, claims 1-32 are currently pending, of which claims 25-32 are withdrawn from consideration. Reexamination and reconsideration of the pending claims are respectfully requested.

The Office Action objects to claims 23-24 as being substantial duplicate thereof. To advance prosecution, Applicants have amended claim 24 to more clearly define claimed subject matter. Claim 24 now depends from claim 23 and further defines the system of claim 23. Applicants respectfully request withdrawal of the objection to claims 23-24.

The Office Action rejects claim 16 under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants have amended claim 16 to more clearly define claimed subject matter. Applicants, therefore, respectfully request withdrawal of the rejection of claim 16.

The Office Action rejects claims 1-3, 5, 7-9, 11, 16, 23-25 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,210,894 to Brennan (*Brennan*). Applicants respectfully traverse the rejection.

As required in M.P.E.P. § 2131, in order to anticipate a claim under 35 U.S.C. § 102, “the reference must teach every element of the claim.” *Brennan* fails to teach all the elements of claims 1-3, 5, 7-9, 11, 16, 23-25, and thus cannot anticipate these claims.

Claim 1 recites, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.” The present invention further explains that “the term ‘borders’ means structures in relief formed on the substrate in order to create unjoined depressions. These depressions are not ‘embedded’ in the substrate body, but are created on its surface by their border.” *Specification*,

page 12, lines 14-18. *Brennan* fails to teach at least this element of claim 1. The Office Action cites Figure 3 of *Brennan* for disclosing “each surrounded by a border that is non-wetting wherein the borders are not touching and have no common edge.” *Office Action*, page 3. Figure 3 shows a derivatized hydrophilic binding site (OH) surrounded by a hydrophobic fluoroalkylsilane site (F). The derivatized hydrophilic binding site (OH) and the hydrophobic fluoroalkylsilane site (F) are flat. The hydrophobic fluoroalkylsilane site (F) does not constitute a structure in relief. In addition, *Brennan* discloses that “[b]ecause of the differences in wetting properties of the reactant solution on the functionalized binding site and the surrounding surface, the microdroplet of the reactant solution beads on the functionalized binding site and the reactants in solution react with the surface.” *Brennan*, column 6, lines 5-10. This further establishes that *Brennan* fails to disclose the “border” of claim 1. Accordingly, claim 1 is allowable over *Brennan*. Claims 2-3, 5, 7-9, 11, 16, 23-25 variously depend from claim 1, and are also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-3, 5, 7-9, 11, 16, 23-25.

The Office Action rejects claims 1-3, 5, 7-9, 11-12, and 23-25 under 35 U.S.C. 102(e) as being anticipated by PCT Publication No. WO 03/059518 to Papkovsky et al. (*Papkovsky*). Applicants respectfully traverse the rejection.

Claim 1 recites, “a work box (Bo) provided with means (o, s) for introducing a liquid of interest (E) into the box and for extracting the liquid of interest from the box.” *Papkovsky* fails to teach at least this element of claim 1. The Office Action states that “Papkovsky teaches a work box (2).” *Office Action*, page 5. Applicants submit that reference number 2 represents a base, not a work box. See, *Papkovsky*, page 9, lines 27-29. The Office Action also states that *Papkovsky* discloses “opening for introducing and extracting liquid (10) as substrate in the work box.” *Office Action*, page 5. Applicants note that reference number 10 represents a capillary gap between rim (9) and lid (3). See, *Papkovsky*, page 10, lines 20-21. In fact, “a test sample S is placed in each microwell 4 with a volume of 2.5 μ l, exceeding the height of the walls 5 [and t]he lid 3 is the placed over the base 2 so that it lies uniformly over all of the walls 5 and the frames 7.” *Papkovsky*, page 10, lines 15-17. In other words, the test sample S is placed in each microwell 4 before the formation of the capillary gap 10 by placing the lid 3 on the rim 9.

Therefore, the capillary gap 10 cannot be “means (o, s) for introducing a liquid of interest (E) into the box.”

Claim 1 also recites, “a substrate (S) comprising an active surface that is substantially non-wetting for said liquid of interest contained in said box.” *Papkovsky* also fails to teach at least this element of claim 1. *Papkovsky* discloses that “[t]he base 2 is made using a standard 4-inch silicon wafer as substrate.” *Papkovsky*, page 10, line 4. *Papkovsky* further discloses that “the surface of the wafer is profiled to produce the microwells 5, the over-spill cavities 6, and the frame 7 of the desired size and shape.” *Papkovsky*, page 10, lines 5-7. Thus, the chemical nature of the microwells and the over-spill cavities is identical to the chemical nature of the base 2. *Papkovsky* is silent with respect to “an active surface that is substantially non-wetting for said liquid of interest.”

Accordingly, claim 1 is allowable over *Papkovsky*. Claims 2-3, 5, 7-9, 11-12, and 23-25 variously depend from claim 1, and are also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-3, 5, 7-9, 11-12, and 23-25.

The Office Action rejects claims 4 and 12-15 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of U.S. Patent No. 6,017,696 to Heller (*Heller*). Applicants respectfully traverse the rejection.

To establish *prima facie* obviousness of a claimed invention, all the elements of the claim must be taught or suggested by the prior art. The combined teaching of *Brennan* and *Heller* fails to teach or suggest all the elements of claims 4 and 12-15, and thus cannot anticipate these claims.

Claims 4 and 12-15 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.” *Heller* does not cure the deficiency of *Brennan*. The Office Action cites *Heller* for disclosing “the

substrate comprises an organic polymer and metal and wherein the work zone has a rectangular/square shape.” *Office Action*, page 7. *Heller* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claims 4 and 12-15 are allowable over the combined teaching of *Brennan* and *Heller*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 4 and 12-15.

The Office Action rejects claim 6 under 35 U.S.C. §103(a) as being upatentable over *Brennan* in view of *Heller*, and further in view of U.S. Patent No. 5,582,697 to Ikeda et al. (*Ikeda*). Applicants respectfully traverse the rejection.

Claim 6 depends from claim 1, and incorporates all the elements of claim 1. As discussed, the combined teaching of *Brennan* and *Heller* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.” *Ikeda* does not cure the deficiency of *Brennan* and *Heller*. The Office Action only cites *Ikeda* for disclosing a biosensor wherein the sample detection occurs via electrode actuator. *Office Action*, page 8. *Ikeda* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claim 6 are allowable over the combined teaching of *Brennan*, *Heller*, and *Ikeda*. Applicants, therefore, respectfully request withdrawal of the rejection of claim 6.

The Office Action rejects claim 10 under 35 U.S.C. §103(a) as being upatentable over *Brennan* in view of U.S. Patent No. 5,959,098 to Goldberg et al. (*Goldberg*). Applicants respectfully traverse the rejection.

Claim 10 depends from claim 1, and incorporates all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.” *Goldberg* does not cure the deficiency of *Brennan*. The Office Action cites *Goldberg* for disclosing non-wetting blank zone. *Office Action*, page 9. *Goldberg* is also silent with respect to the above-

recited elements of claim 1. Accordingly, claim 1 and its dependent claim 10 are allowable over the combined teaching of *Brennan* and *Goldberg*. Applicants, therefore, respectfully request withdrawal of the rejection of claim 10.

The Office Action rejects claims 12 and 17 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of *Papkovsky*. Applicants respectfully traverse the rejection.

Claims 12 and 17 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.”

Papkovsky does not cure the deficiency of *Brennan*. The Office Action cites *Papkovsky* for disclosing patterning by stamping or moulding. *Office Action*, page 9. Accordingly, claim 1 and its dependent claims 12 and 17 are allowable over the combined teaching of *Brennan* and *Papkovsky*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 12 and 17.

The Office Action rejects claims 18-22 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of U.S. Patent Application Publication No. 2002/0168624 to Yuen (*Yuen*). Applicants respectfully traverse the rejection.

Claims 12 and 17 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge.” *Yuen* does not cure the deficiency of *Brennan*. The Office Action cites *Yuen* for disclosing a pump and vacuum is attached to evacuate or purge the chamber. *Office Action*, page 10. *Yuen* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claims 12 and 17 are allowable over the combined teaching of *Brennan* and *Yuen*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 12 and 17.

The Office Action provisionally rejects claims 1-25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-40 of copending Application 10/576,345. Applicants respectfully disagree. As this is provisional rejection and both applications are pending, Applicants reserve the right to further address the double patenting rejection upon indication of allowability.

Applicants believe the application in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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